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SOME NOTES ON THE EGG OF *AEPYORNIS MAXIMUS*

By WM. C. BRADBURY

WITH FOUR PHOTOS

IT HAVING been suggested to me that probably many readers of THE CONDOR had never seen the egg of the extinct *Aepyornis maximus*, and that a description and photographs would be acceptable, I submit the following.

Some three years ago, I first saw an egg of this species in the American Museum of Natural History, New York City, and immediately became imbued with a desire to possess one. Dr. F. A. Lucas, Director of the American Museum, kindly gave me the addresses of several parties in London likely to be in a position to furnish a specimen, and with these I carried on a correspondence for nine months. This was unsuccessful, there apparently being no example of the *Aepyornis* egg to be obtained there. In discussing the matter with Dr. Wm. T. Hornaday about that time, this gentleman at once put me in touch with the administrators of the estate of the late Robert Gilfort, of New Jersey, a world-wide traveler and collector, from whom I was fortunate enough to secure the specimen here figured.

Deciding that the egg would make a more attractive exhibit for the average visitor if accompanied by eggs of modern species, varying in size from the largest to the smallest, I supplied these from the material available (see fig. 20). This exhibit was then presented to the Colorado Museum of Natural History, where it takes a place among the special features associated with the "Bradbury Collection of North American Birds' Eggs."

Nearly or quite a perfect oval in form and measuring $9\frac{9}{16}$ by 13 inches, this egg is in a wonderfully excellent state of preservation. It weighs but 81 ounces, and it is doubtful if it can be termed fossilized, or "replaced" through mineral deposition; rather, is it preserved by an impregnation of iron, associated with calcite. There is some slight variation in color, but this is of a negligible character and the color tone may be described as a more or less uniform "buffy brown" (see Ridgway's *Color Standards*).

While figure 21 is a good representation of the egg, it fails to reveal sufficient minuteness of detail in texture of surface, and for that reason a natural-

size illustration is shown in figure 22. The reverse side (see figure 23), that upon which the egg may have lain for a long time, presents a roughened surface, the result of concretionary deposits of lime, a condition frequently noted in fossils of certain periods. No attempt has been made to remove these small, irregular nodules. Indeed, they, together with the opportunity they present for chemical analysis, furnish unquestionable proof of the genuineness of the egg, the value and importance of which most collectors cannot help but appreciate in a subject of such rarity.

Whether the shell of the egg is fossilized or not, its original contents has nearly disappeared; for, by holding the egg between the hands and reversing it end for end, one can plainly hear and feel what appears to be several tablespoonfuls of fine, sand-like material, or possibly thin scales. This probably does not exceed two ounces in weight. As stated, the present weight of the egg is but 5 pounds, 1 ounce, and its displacement is $18 \frac{2}{3}$ pints, equivalent to the displacement of 183 hen's eggs.

Were the shell and original contents fossilized, it would weigh (assuming the weight of lime stone for the purpose) about 51 pounds, 5 ounces. Based

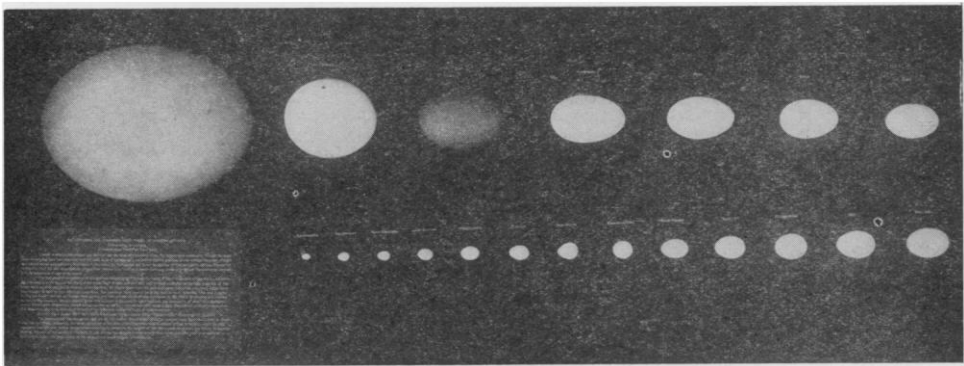


Fig. 20. EGG OF AEPYORNIS (AT LEFT) IN COMPARISON WITH EGGS OF OSTRICH, EMU, ALBATROSS, SWAN, GOOSE, EIDER, MALLARD, HEN, MARSH HAWK, TEAL, ROAD-RUNNER, BURROWING OWL, BOB-WHITE, FLICKER, WOODPECKER, LARK BUNTING, BANK SWALLOW, GOLDFINCH, HUMMINGBIRD.

on the average weight of 48 assorted hen's eggs used for the purpose, multiplied by 183 displacement measurements, its weight when fresh would be 22 pounds, 4 ounces. There being no fracture in the shell of the egg, its present thickness has not been determined.

All figures given in the label accompanying the exhibit are based on an average of a series of tests for displacement, these being made with thoroughly dried table salt. As both bulk and weight were employed in computing the relative sizes of the several eggs, the figures may be considered as substantially accurate. The descriptive matter on the exhibition label reads as follows.

"Closely related to the present day Ostrich and to the Moa of prehistoric times, the Aepyornis is known only through the scant fossil remains that have been unearthed from the sand-dunes of Madagascar. Like the Ostrich and Moa, it was without the power of flight and became extinct long before the first visits to the island by Portuguese and Dutch navigators. At that period, the natives claimed the bird still existed, but later investigations proved their

stories to be traditional. Indeed, there is no evidence to indicate *Aepyornis* survived until the appearance of man on the island.

“The first proof of the existence of this bird was brought to light through



Fig. 21. EGG OF *AEPYORNIS*, UPPER SIDE AS REGARDS PROBABLE ORIGINAL POSITION; A LITTLE LESS THAN HALF NATURAL SIZE.

the finding of ‘fossil’ fragments of egg-shell, and these are presumed to be the basis of the story of the fabled ‘Roc’. It was not until 1851 that perfect

examples of the eggs and a few of the bones were secured and sent to France, when Geoffroy--St.Hilaire gave them the technical name *Aepyornis maximus*. Eggs have been brought to light at rare intervals since then, the specimen here shown being the first to reach America. This was imported by the late Robert Gilfort, of Orange, New Jersey, and from whose estate it was purchased by Mr. Wm. C. Bradbury, and donated by him to the museum.

"Measurements prove this example to exceed, by a full half inch, the dimensions of other recorded specimens; but its giant proportions can not be appreciated except by comparison with modern eggs. Calculations in dis-

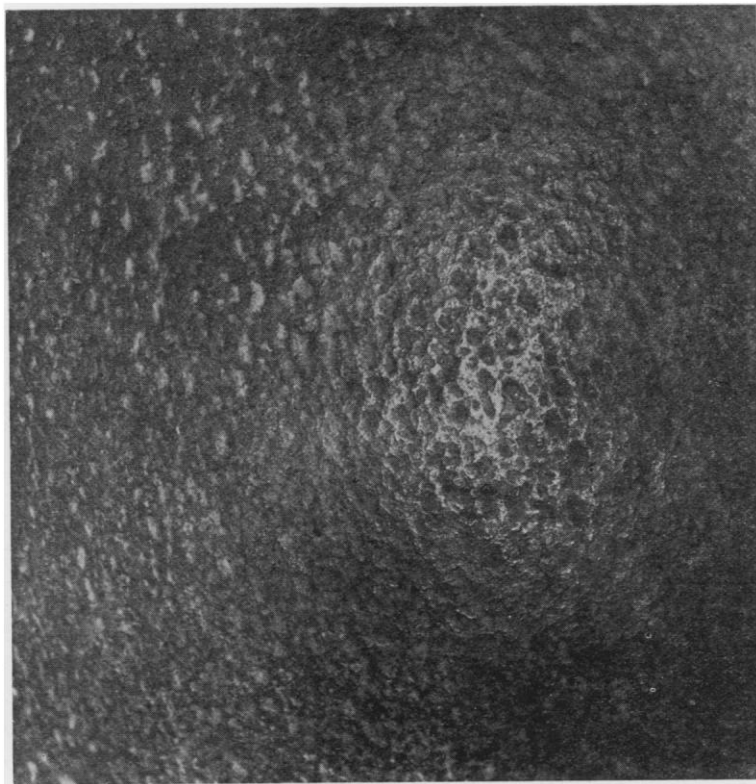


Fig. 22. PORTION OF SURFACE OF AEPYORNIS EGG, NATURAL SIZE, TO SHOW DETAIL OF TEXTURE.

placement show the *Aepyornis* egg to be equivalent to each of the following number of eggs of modern species:

"Ostrich, $7\frac{1}{3}$; Albatross, $24\frac{2}{3}$; Goose, 40; Duck, $109\frac{2}{3}$; Hen, 183; Pigeon, 469; and Hummingbird 12,062.

"The dimensions of this *Aepyornis* egg are $9\frac{9}{16}$ by 13 inches. Insufficient skeletal remains have been discovered to determine the size of the *Aepyornis*. Complete skeletons of the Moa show the latter bird to exceed ten feet in height, while its egg measures but $6\frac{1}{2}$ by $10\frac{1}{2}$ inches. Comparative estimates to determine the height of the *Aepyornis*, however, are likely to be misleading, because of the evidence that birds do not always lay eggs to conform with their

size; until additional material is brought to light, the dimensions of the *Aepyornis* must remain problematic.”

For assistance in the preparation of this article and the displacement



Fig. 23. *AEPYORNIS* EGG, SAME AS SHOWN IN FIG. 21, BUT OPPOSITE SIDE, SHOWING EXTRANE-
OUS CONCRETIONS PROBABLY DERIVED FROM GROUND ON WHICH IT LAY.

measurements showing the relative size of different eggs, as well as for photographs, I am indebted to Mr. J. D. Figgins, Director of the Museum.

Denver, Colorado, March 1, 1919.